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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,613	06/19/2006	Niclas Wiberg	P18737-US1	8421

27045 7590 06/10/2009
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EXAMINER	
HAIDER, SYED	

ART UNIT	PAPER NUMBER
4147	

MAIL DATE	DELIVERY MODE
06/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,613	Applicant(s) WIBERG ET AL.	
	Examiner SYED HAIDER	Art Unit 4147	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _19 June 2006_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _26-50_ is/are pending in the application.

4a) Of the above claim(s) _1-25_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _26-50_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _06/19/2006_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 48 rejected under 35 U.S.C. 102(e) as being anticipated by Sampath (Publication# US 2003/0012308).

As per Claim 48, Sampath discloses an apparatus in a transmitter unit for transmitting communication signals (Sampath, Fig. 1:111) to a receiver unit (Sampath, Fig. 1:131), comprising means for indicating a requested representation of the content of a channel measurement message (Sampath, Fig. 4:420, Adaptive channel estimator, which measure the requested content as shown in the Fig.) to be transmitted to the transmitter unit (Sampath, Fig. 1:111) in terms of the manner of said representation (Sampath, paragraph#28 explains that Channel estimators estimate the training channel responses for the training symbols, and interpolate the training channel responses to estimate the data channel responses for the data symbols).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-47 and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sampath (Publication# US 2003/0012308) and further in view of Moose (Publication# 2002/0065047).

As per Claim 26, Sampath discloses, a method in a receiver unit to receive communication signals from a transmitter unit via a multi-path channel, said method comprising the steps of:

estimating parameters of a channel filter function of said channel (Sampath, Fig. 4:420) from said received communication signals (Sampath, Fig. 1:131) from the transmitter unit (Sampath, Fig. 1:111);

sub-dividing the channel filter function into two or more parts (Sampath, paragraph#26 explains that the base station controller 102 controls the transmit antenna 111 to transmit a signal ("transmitted signal") encoded using an orthogonal frequency division multiplexing (OFDM) protocol. In OFDM systems, the bandwidth is divided into many narrow frequency bands ("tones"), a function of which representing an

approximation of the estimated full channel filter function (Sampath, Fig. 4:420, Adaptive channel estimator which represents the full channel filter function); representing the complex parameters (Sampath, paragraph#27 explains that "the signal as received ("received signal") by the receive antenna 131 has a delay spread, DS1, due to multipaths. The delay spread can range from less than 75 nanoseconds to more than 20 microseconds, depending on the environment. In a more moderate environment the delay spread may be on the order of 5 microseconds" which are complex parameters) of at least a selection of said parts of the channel filter function as actual parameter values (Sampath, paragraph#28 explains that Channel estimators estimate the training channel responses for the training symbols, and interpolate the training channel responses to estimate the data channel responses for the data symbols.), composing a channel measurement message (Sampath, Fig. 4:420, Adaptive channel estimator) to be transmitted to the transmitter unit (Sampath, Fig. 1:111) of a portion including said parameter representations (Sampath, paragraph#27 explains that the signal as received ("received signal") by the receive antenna 131 has a delay spread, DS1, due to multipaths. The delay spread can range from less than 75 nanoseconds to more than 20 microseconds, depending on the environment. In a more moderate environment the delay spread may be on the order of 5 microseconds) and a portion indicating the manner of representing said parameters (Sampath, paragraph#28 explains that Channel estimators estimate the training channel responses for the training symbols, and interpolate the training channel responses to estimate the data channel responses for the data symbols).

Sampath does not disclose incremental values indicating the difference to a reference value.

Moose discloses incremental values indicating the difference to a reference value (Moose, paragraph#116 explains that "an additional feature of the present invention is that the pilot tone tracking circuitry can adjust each OFDM symbol for residual frequency offset error. The pilot tone tracking circuitry also adjusts each symbol for differences in the transmitter and receiver sampling rates (nominally 20 MHz) and/or residual symbol timing error" which indicates the difference).

At the time of the invention, it would have been obvious to one ordinary skill in the art to modify Sampath teachings by implementing the amplitude and phase values to Adaptive channel estimation, as taught by Moose.

The motivation would be to improve the communication system operates to transmit communication signals having informational contents and other characteristics generated at, or applied or provided to, a transmitter upon the communication channel.

As per claim 27, Sampath in view of Moose disclose the method according to claim 26, wherein said function performs a summing of the sub-divided parts (Sampath, Fig. 5:580, which add the selected delay) of the channel filter function (Sampath, Fig. 4:420).

As per Claim 28, Sampath in view of Moose discloses the method according to claim 26, wherein the sub-divided parts of the channel filter function comprise channel

information of a ranked degree of significance (Sampath, paragraph#26 explains thatIn OFDM systems, the bandwidth is divided into many narrow frequency bands ("tones"). The information to be transmitted ("transmitted information") is encoded into a sequence of data symbols and modulated onto data tones).

As per Claim 29, Sampath in view of Moose discloses the method according to claim 26, wherein the channel filter function is represented as a channel impulse response in the time-domain (Sampath, paragraph#62 explains that well-known time-domain correlation techniques may be used to compute delay spread. For example, the training symbols as transmitted (known at the receiver) can be correlated with the training symbols as received. The location of the peaks in the correlation indicates a multipath for the channel).

As per Claim 30, Sampath discloses the method according to claim 29, wherein the complex parameters (Sampath, paragraph#27 explains that the signal as received ("received signal") by the receive antenna 131 has a delay spread, DS1, due to multipaths. The delay spread can range from less than 75 nanoseconds to more than 20 microseconds, depending on the environment. In a more moderate environment the delay spread may be on the order of 5 microseconds) of the channel impulse response are reproduced as amplitude and phase values.

Sampath does not disclose channel impulse response are reproduced as amplitude and phase value.

Moose discloses channel impulse response are reproduced as amplitude and phase value (Moose, paragraph#24, explains that each data sub-carrier is phase and or amplitude modulated independently).

At the time of the invention, it would have been obvious to one ordinary skill in the art to modify Sampath teachings by implementing the amplitude and phase values to Adaptive channel estimation, as taught by Moose.

The motivation would be to improve the communication system operate to transmit communication signals having informational contents and other characteristics generated at, or applied or provided to, a transmitter upon the communication channel.

As per Claim 31, Sampath in view of Moose discloses the method according to claim 29, wherein the primary sub-divided filter function (Sampath, paragraph#26 explains that the base station controller 102 controls the transmit antenna 111 to transmit a signal ("transmitted signal") encoded using an orthogonal frequency division multiplexing (OFDM) protocol. In OFDM systems, the bandwidth is divided into many narrow frequency bands ("tones")) includes a representation of one or more of the most significant channel components (Sampath, paragraph#65 explains that If the correlation is between zero and .rho.0, the delay spread is large and the selector 580 generates selects the data channel responses on the bus 571).

As per claim 32, Sampath in view of Moose discloses the method according to claim 31, wherein the most significant channel component is the component having the shortest delay (Sampath, Fig. 5:580, selector which can selects the shortest delay).

As per claim 33, Sampath disclose the method according to claim 26, wherein the channel filter function is represented (Sampath, Fig. 4:420)

Sampath does not disclose a channel frequency response in the frequency-domain.

Moose discloses a channel frequency response in the frequency-domain (Moose paragraph#35 explains that The sample values 600 are frequency shifted by the fine fractional frequency estimate 610 obtained in the first iteration so that any residual frequency offset will be an integer multiple of the sub-carrier frequency spacing).

At the time of the invention, it would have been obvious to one ordinary skill in the art to modify Sampath teachings by implementing the amplitude and phase values to Adaptive channel estimation, as taught by Moose.

The motivation would be to improve the communication system operate to transmit communication signals having informational contents and other characteristics generated at, or applied or provided to, a transmitter upon the communication channel.

As per claim 34, Sampath in view of Moose disclose the method according to claim 33, wherein a complex parameter of the channel frequency response (Moose, paragraph#38 explains that this required channel transfer function is in fact the channel

transfer function corresponding to the correct integer frequency offset determined during the processing described above. This estimated transfer function is used to correct the sub-carrier amplitudes and phases following FFT demodulation and prior to decoding) is reproduced at least as an amplitude value (Moose, paragraph#72 explains that the multi-path channel may introduce additional phase shifts and amplitude variations onto the sub-carriers.) and optionally by an additional phase value (Moose, paragraph#72 explains that the multi-path channel may introduce additional phase shifts and amplitude variations onto the sub-carriers.).

As per claim 35, sampath discloses the method according to claim 26, wherein the complex parameters of said parts of the channel filter function are represented by their actual valuesin case of a significant change (Sampath, paragraph#27 explains that the signal as received ("received signal") by the receive antenna 131 has a delay spread, DS1, due to multipaths. The delay spread can range from less than 75 nanoseconds to more than 20 microseconds, depending on the environment. In a more moderate environment the delay spread may be on the order of 5 microseconds)

Sampath does not disclose compared to a previous reference value.

Moose disclose compared to a previous reference value (Moose, paragraph#43 explains that a new estimate of frequency offset is obtained from the previous value at step 813 and the error and is applied to the subsequent OFDM symbol at step 815 prior to demodulation. The coefficient of the first order term of the line fit to the data is the average slope of the phase change versus sub-carrier frequency at step 809).

At the time of the invention, it would have been obvious to one ordinary skill in the art to modify Sampath teachings by implementing the amplitude and phase values to Adaptive channel estimation, as taught by Moose.

The motivation would be to improve the communication system operates to transmit communication signals having informational contents and other characteristics generated at, or applied or provided to, a transmitter upon the communication channel.

As per Claim 36, Sampath in view of Moose discloses the method according to claim 35, wherein the reference value corresponds to a previous channel parameter representation (Moose, paragraph#43 explains that a new estimate of frequency offset is obtained from the previous value at step 813 and the error and is applied to the subsequent OFDM symbol at step 815 prior to demodulation. The coefficient of the first order term of the line fit to the data is the average slope of the phase change versus sub-carrier frequency at step 809).

As per Claim 37, Sampath in view of Moose disclose the method according to claim 37, wherein the modeled estimate is a interpolation (Moose, paragraph#80 explains that as the channel transfer function does not change randomly between adjacent sub-carriers. Accordingly, the channel response at an intermediate frequency can be accurately estimated from the response at adjacent nearby frequencies. In any event, a more accurate interpolation algorithm can be used than (24), if necessary.) Of the channel filter function from the complex parameters of the channel filter function

(Sampath, paragraph#27 explains that the signal as received ("received signal") by the receive antenna 131 has a delay spread, DS1, due to multipaths. The delay spread can range from less than 75 nanoseconds to more than 20 microseconds, depending on the environment. In a more moderate environment the delay spread may be on the order of 5 microseconds).

As per claim 38,Sampath in view of Moose disclose the method according to claim 35, wherein the reference value (Moose, paragraph#43 explains that a new estimate of frequency offset is obtained from the previous value at step 813 and the error and is applied to the subsequent OFDM symbol at step 815 prior to demodulation. The coefficient of the first order term of the line fit to the data is the average slope of the phase change versus sub-carrier frequency at step 809) corresponds to a modeled estimate of the channel filter function (Sampath, paragraph#24 explains that the channel estimation is adapted according to the estimated delay spread to produce more accurate channel estimates in a broad range of delay spread environments. More accurate channel estimation generally reduces error rates for a given data transmission rate and/or increases data transmission rates for given error rate).

As per Claim 39, Sampath in view of Moose disclose the method according to claim 37, wherein said modeled estimate (Sampath, paragraph#24 explains that the channel estimation is adapted according to the estimated delay spread to produce more accurate channel estimates in a broad range of delay spread environments. More

accurate channel estimation generally reduces error rates for a given data transmission rate and/or increases data transmission rates for given error rate) of the channel filter function has been received by the transmitter unit (Sampath, Fig. 1:111, which will receive the accurate estimation of channel).

As per Claim 40, Sampath discloses a message format for representing a channel filter function,comprising:

a first portion representing each of the complex parameters of the sub-divided parts (Sampath, paragraph#26 explains that the base station controller 102 controls the transmit antenna 111 to transmit a signal ("transmitted signal") encoded using an orthogonal frequency division multiplexing (OFDM) protocol. In OFDM systems, the bandwidth is divided into many narrow frequency bands ("tones")) of the channel filter function

Sampath does not disclose at least an amplitude value and optionally by an additional phase value.

Moose discloses at least an amplitude value (Moose, pargraph#24 explains that each data sub-carrier is phase and/or amplitude modulated independently) and optionally by an additional phase value (Moose, pargraph#24 explains that each data sub-carrier is phase and/or amplitude modulated independently).

At the time of the invention, it would have been obvious to one ordinary skill in the art to modify Sampath teachings by implementing the amplitude and phase values to Adaptive channel estimation, as taught by Moose.

The motivation would be to improve the communication system operates to transmit communication signals having informational contents and other characteristics generated at, or applied or provided to, a transmitter upon the communication channel.

As per claim 41, Sampath in view of Moose disclose the message format according to claim 40, further comprising
a second portion comprising an indication of the manner of representing said complex parameters (Sampath, paragraph#26 explains that the base station controller 102 controls the transmit antenna 111 to transmit a signal ("transmitted signal") encoded using an orthogonal frequency division multiplexing (OFDM) protocol. In OFDM systems, the bandwidth is divided into many narrow frequency bands ("tones")).

Sampath does not disclose at least an indication α denoting the influence of previously measured parameter values.

Moose discloses at least an indication α denoting the influence of previously measured parameter values (Moose, paragraph#37 explains that the algorithm provides for maximum accuracy due to the high gain of the correlation operation. Standard carrier frequency offset algorithms use the short sync symbols to extend their range, but only to. +-.2 or a maximum allowed carrier frequency offset of. +-.625 KHz. Also, standard algorithms have less accuracy due to the lower gain in their correlators. The total frequency offset, consisting of fractional plus integer parts, is applied as a correction to the OFDM data symbols in the packet prior to demodulation and decoding.)

As per Claim 42, Sampath in view of Moose disclose the message format according to claim 41, wherein alpha is a binary value (Moose, paragraph#37 explains that the total frequency offset, consisting of fractional plus integer parts, is applied as a correction to the OFDM data symbols in the packet prior to demodulation and decoding).

As per claim 43, Sampath in view of Moose disclose the message format according to claim 41, wherein said second portion comprises an indication of the domain (Sampath, paragraph#42 explains that FIG. 3 illustrates one embodiment of a data-with-training slot illustrated in the frequency domain. A data-with-training slot is used in high mobility situations and where channel conditions change frequently) within which the channel filter function is represented (Sampath, Fig. 4:420).

As per claim 44, Sampath in view of Moose disclose the message format according to claim 41, wherein said second portion includes an indication of the sampling period (Moose, paragraph#45 explains that the short sync signal repeats itself every 16-sample points. A 64-point IFFT of a modulation sequence with non-zero values at every fourth sub-carrier will generate four periods of the short sync. Repeating this sequence 1.5 times generates the ten repetitions of the short sync of 160 sample points.) for the complex parameter values of the sub-divided parts of the channel filter function (Sampath, paragraph# explains that the base station controller 102 controls the

transmit antenna 111 to transmit a signal ("transmitted signal") encoded using an orthogonal frequency division multiplexing (OFDM) protocol. In OFDM systems, the bandwidth is divided into many narrow frequency bands ("tones")).

As per Claim 45, Sampath in view of Moose disclose the message format according to claim 40, wherein said representations of the complex parameters of the sub-divided parts (Sampath, paragraph# explains that the base station controller 102 controls the transmit antenna 111 to transmit a signal ("transmitted signal") encoded using an orthogonal frequency division multiplexing (OFDM) protocol. In OFDM systems,the bandwidth is divided into many narrow frequency bands ("tones")).of the channel filter function are associated to an indication (321) of a time or frequency instance (Moose, paragraph#38 explains that this required channel transfer function is in fact the channel transfer function corresponding to the correct integer frequency offset determined during the processing described above. This estimated transfer function is used to correct the sub-carrier amplitudes and phases following FFT demodulation and prior to decoding).

As per Claim 46, Sampath discloses an apparatus for processing communication signals received via a multipath channel, comprising:
means for estimating parameters of a channel filter function of said channel (Sampath, Fig. 4:420) from said received communication signals (Sampath, Fig. 1:131) from the transmitter unit (Sampath, Fig. 1:111);

means for sub-dividing the channel filter function into two or more parts (Sampath, paragraph#26 explains that the base station controller 102 controls the transmit antenna 111 to transmit a signal ("transmitted signal") encoded using an orthogonal frequency division multiplexing (OFDM) protocol. In OFDM systems, the bandwidth is divided into many narrow frequency bands ("tones")), a function of which representing the estimated full channel filter function (Sampath, Fig. 4:420, Adaptive channel estimator which represents the full channel filter function);

means for representing the complex parameters (Sampath, paragraph#27 explains that the signal as received ("received signal") by the receive antenna 131 has a delay spread, DS1, due to multipaths. The delay spread can range from less than 75 nanoseconds to more than 20 microseconds, depending on the environment. In a more moderate environment the delay spread may be on the order of 5 microseconds, which are complex parameters) of at least a selection of the sub- divided channel filter function as actual parameter values (Sampath, paragraph#28 explains that Channel estimators estimate the training channel responses for the training symbols, and interpolate the training channel responses to estimate the data channel responses for the data symbols); and, means for composing a channel measurement message (Sampath, Fig. 4:420, Adaptive channel estimator) to be transmitted to the transmitter unit (Sampath, Fig. 1:111) including said set of parameter representations and a header field indicating the manner of representing said parameters (Sampath, paragraph#28 explains that Channel estimators estimate the training channel responses for the training symbols,

and interpolate the training channel responses to estimate the data channel responses for the data symbols).

Sampath does not disclose incremental values indicating the difference to a reference value.

Moose discloses incremental values indicating the difference to a reference value (Moose, paragraph#116 explains that "an additional feature of the present invention is that the pilot tone tracking circuitry can adjust each OFDM symbol for residual frequency offset error. The pilot tone tracking circuitry also adjusts each symbol for differences in the transmitter and receiver sampling rates (nominally 20 MHz) and/or residual symbol timing error" which indicates the difference).

At the time of the invention, it would have been obvious to one ordinary skill in the art to modify Sampath teachings by implementing the amplitude and phase values to Adaptive channel estimation, as taught by Moose.

The motivation would be to improve the communication system operates to transmit communication signals having informational contents and other characteristics generated at, or applied or provided to, a transmitter upon the communication channel.

As per 47, Sampath in view of Moose disclose the apparatus according to claim 46, which is integrated in mobile user equipment (Moose, Fig 4:405, integrator).

As per claim 49, Sampath discloses the apparatus according to claim 48, further including means

complex parameters of a modelled estimate of sub-divided parts of a channel filter function (Sampath, paragraph#26 explains that the base station controller 102 controls the transmit antenna 111 to transmit a signal ("transmitted signal") encoded using an orthogonal frequency division multiplexing (OFDM) protocol. In OFDM systems, the bandwidth is divided into many narrow frequency bands ("tones")).

Sampath does not disclose for indicating at least an amplitude value (Moose, paragraph#24, explains that each data sub-carrier is phase and or amplitude modulated independently) and optionally an additional phase value (Moose, paragraph#24, explains that each data sub-carrier is phase and or amplitude modulated independently).

actual parameter values, or as incremental values indicating the difference to a reference value (Moose, paragraph#116 explains that "an additional feature of the present invention is that the pilot tone tracking circuitry can adjust each OFDM symbol for residual frequency offset error. The pilot tone tracking circuitry also adjusts each symbol for differences in the transmitter and receiver sampling rates (nominally 20 MHz) and/or residual symbol timing error" which indicates the difference).

At the time of the invention, it would have been obvious to one ordinary skill in the art to modify Sampath teachings by implementing the amplitude and phase values to Adaptive channel estimation, as taught by Moose.

The motivation would be to improve the communication system operates to transmit communication signals having informational contents and other characteristics generated at, or applied or provided to, a transmitter upon the communication channel.

As per claim 50, Sampath in view of Moose disclose the apparatus according to claim 48, which is integrated in a radio base station (Moose, Fig. 4:405, integrator).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SYED HAIDER whose telephone number is (571)270-5169. The examiner can normally be reached on Monday thru Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hai, Tran can be reached on 571-272-7305. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

06/08/2009
/Hai Tran/
Supervisory Patent Examiner, Art Unit 4147